

What is claimed is:

1. A process for designing a product automatically in accordance with a desired product design concept for a product  
5 under consideration, said process comprising:

analyzing wants and needs information which has been input with respect to the product under consideration;

10 based on the aforesaid analyzed wants and needs information, carrying out weighting with respect to evaluation indices which are quantitative measures of the degree to which the user is likely to perceive a benefit latent in the product under consideration and inherent in the aforesaid wants and needs information to have been achieved, and selecting at least one index among a plurality of such weighted evaluation indices  
15 as a primary evaluation index; and

defining at least one product design concept for which the primary evaluation index selected at said primary evaluation index selecting step is a maximum or minimum.

20 2. A process for designing a product in accordance with a desired product design concept for a product under consideration, said process comprising:

25 carrying out, based on wants and needs information which reflects the wants and needs of the user with respect to the product under consideration , weighting with respect to evaluation indices which are quantitative measures of the degree to which the user is likely to perceive a benefit latent in the product under consideration and inherent in the aforesaid wants and needs information to have been achieved,  
30 and selecting at least one index among a plurality of such weighted evaluation indices is selected as a primary evaluation index; and

defining at least one product design concept for which the primary evaluation index selected at the aforesaid primary

evaluation index selection step is a maximum or minimum.

3. The process according to claim 1 wherein:

said analysis step converts, as a result of application

5 of a conversion rule previously stored in a storage device, said wants and needs information to desired quality information reflecting the usage circumstances under which the user wishes to use the product under consideration; and

said desired quality information is used in said primary

10 evaluation index selecting step to carry out weighting with respect to the aforesaid evaluation index.

4. The process according to claim 1 wherein:

said analysis step converts said wants and needs

15 information to desired quality information as a result of application of situational information reflecting the circumstances under which the product under consideration is to be used; and

said desired quality information is used in said primary

20 evaluation index selection step to carry out weighting with respect to the aforesaid evaluation index.

5. The process according to claim 3 wherein:

in said primary evaluation index selection, weighting of

25 the aforesaid evaluation index is carried out by calculating, for each evaluation index, score indicating correlation between said desired quality information obtained by conversion and said evaluation index.

30        6. The process according to claim 5 further comprising:  
            displaying a matrix table formed by combination of said  
desired quality information and said evaluation indices; and  
            prompting user to input ranked information with respect  
to said matrix table.

7. The process according to claim 1 further comprising:  
prompting user to input said wants and needs information.

5       8. The process according to claim 7 wherein said prompting  
step comprises:

prompting user to input said wants and needs information  
with respect to the product by way of a wants and needs  
information input/output equipment provided at the product or  
10 at a product containing the product; and

sending said wants and needs information input by the  
user by way of said wants and needs information input/output  
equipment to a server.

15     9. The process according to claim 7 wherein said prompting  
step comprises:

storing identification information identifying the user  
who input the aforesaid wants and needs information in linked  
fashion with the aforesaid wants and needs information; and

20     increasing the value of a point for providing positive  
feedback in response to input of said wants and needs  
information in connection with a product that is put on the  
market for a user identified based on said identification  
information.

25     10. The process according to claim 3 further comprising:  
carrying out weighting of said desired quality  
information obtained by conversion at said analysis step;  
the weighted desired quality information being used at  
30 said primary evaluation index selection step to carry out  
weighting with respect to the aforesaid evaluation index.

11. A process according to claim 10 wherein:  
in said weighting step, weighting is carried out by

calculation based on voting input by the user for said desired quality information obtained by conversion.

12. The process according to claim 1 wherein said  
5 evaluation indices are indices which admit of quantitative measurement and which are capable of being controlled at the product provider's site.

13. The process according to claim 1 further comprising:  
10 selecting a product design concept having the highest total adjusted score from a group of design concepts associated with a product design concept defined at said product concept definition step, said adjusted score being obtained by calculations involving increase or decrease of scores for the 15 aforesaid evaluation indices in correspondence to evaluation of the likely effect of adoption of the respective product design concepts.

14. The process according to claim 1 wherein said primary  
20 evaluation index definition step comprises:

calculating a first score by summing, for each evaluation index, values indicating respective degrees of correlation between the aforesaid evaluation indices which have been previously stored and desired quality information obtained by  
25 conversion;

calculating a difference in levels of satisfaction of the user with respect to the provider of the product under consideration and another provider which provides a product equivalent thereto as input by the user for each evaluation  
30 index; and

calculating a weighted second score based on the aforesaid calculated values indicating differences in levels of satisfaction.

15. The process according to claim 1 wherein  
said product concept definition step comprises:  
defining an interfering factor which interferes with  
achievement of functionality associated with the evaluation  
5 index selected at said primary evaluation index selection step;  
obtaining means for circumventing said interfering factor  
by searching a design information database in which design  
concepts from past product designs are stored; and  
storing said interfering factor circumvention means as a  
10 design concept for the product under consideration.

16. A method of assisting in design of a product that uses  
a computer to acquire information indicating wants and needs  
of a user with respect to a product under consideration, said  
15 method comprising:  
prompting user to input the wants and needs information  
by way of a wants and needs information input/output equipment  
provided at the product or at apparatus containing the product;  
and  
20 sending the wants and needs information input by the user  
by way of the aforesaid wants and needs information  
input/output equipment to a server.

17. An apparatus for designing a product, using a computer  
25 in accordance with a desired product design concept for a  
product under consideration, said apparatus comprising:  
an analyzer that analyzes wants and needs information  
which has been input with respect to the product under  
consideration;  
30 a primary evaluation index definer that, based on said  
analyzed wants and needs information, carries out weighting  
with respect to evaluation indices which have been previously  
stored in a storage device and which are quantitative measures  
of the degree to which the user is likely to perceive a benefit

latent in the product under consideration and inherent in said wants and needs information to have been achieved, and that selects at least one index among a plurality of such weighted evaluation indices as a primary evaluation index; and

5        a product concept evaluator that defines at least one product design concept for which the primary evaluation index selected by said primary evaluation index definer is a maximum or minimum.

10        18. The apparatus according to claim 17 wherein:

      said analyzer, by applying a conversion rule previously stored in a storage device, converts said wants and needs information to desired quality information reflecting the usage circumstances under which the user wishes to use the product; and

15        said primary evaluation index definer uses said desired quality information to carry out weighting with respect to said evaluation index.

20        19. The apparatus according to claim 18 wherein the aforesaid primary evaluation index definer:

      carries out weighting of said evaluation index by calculating, for each evaluation index, score indicating correlation between said desired quality information obtained 25 by conversion and said evaluation index.

20. The apparatus according to claim 19 further comprising:

30        an input/output unit that displays a matrix table formed by combination of said desired quality information and said evaluation indices, and that prompts user to input ranked information with respect to said matrix table.

21. The apparatus according to claim 17 further

comprising:

a wants and needs information collector that prompts the user to input said wants and needs information.

5        22. A product design terminal device which uses a computer to acquire, at a user's site, information indicating wants and needs of the user with respect to a product under consideration, said product design terminal device comprising:

10      an input unit that prompts user to input said wants and needs information with respect to the product by way of a wants and needs information input/output equipment provided at the product or at a product containing the product; and

15      a sending unit that sends to a server said wants and needs information which was input from the user by way of said wants and needs information input/output equipment.

22 further comprising:

20      a storage unit that stores, in linked fashion with said wants and needs information, identification information identifying the user who input the aforesaid wants and needs information; and

25      a point value calculator that increases the value of a point for providing positive feedback in response to input of said wants and needs information in connection with a product that is put on the market for a user identified based on said identification information.

30      24. A computer-readable recording medium for storing a program capable of causing a computer to perform product design processing in accordance with a desired product design concept for a product under consideration, the aforesaid product design processing comprising:

analysis processing for analyzing wants and needs

information which has been input with respect to the product under consideration;

primary evaluation index selection processing for carrying out, based on said analyzed wants and needs

- 5 information, weighting with respect to evaluation indices which have been previously stored in a storage device and which are quantitative measures of the degree to which the user is likely to perceive a benefit latent in the product under consideration and inherent in the aforesaid wants and needs
- 10 information to have been achieved, and selecting at least one index among a plurality of such weighted evaluation indices as a primary evaluation index; and

product concept definition processing for defining at least one product design concept for which the primary evaluation index selected by said primary evaluation index selection processing is a maximum or minimum.

25. The recording medium according to claim 24 wherein:

the aforesaid analysis processing converts, as a result of application of a conversion rule previously stored in a storage device, said wants and needs information to desired quality information reflecting the usage circumstances under which the user wishes to use the product; and

- 20 said primary evaluation index selection processing uses  
25 said desired quality information to carry out weighting with respect to the aforesaid evaluation index.

26. The recording medium according to claim 25 wherein:

said primary evaluation index selection processing

- 30 carries out weighting of the aforesaid evaluation index by calculating, for each evaluation index, score indicating correlation between said desired quality information obtained by conversion and said evaluation index.

27. The computer-readable recording medium according to  
claim 26 wherein said product design processing further  
comprises:

ranked input processing for displaying a matrix table  
5 formed by combination of said desired quality information and  
said evaluation indices, and for prompting user to input ranked  
information with respect to said matrix table.

28. The computer-readable recording medium according to  
10 claim 24 wherein the aforesaid product design processing  
further comprises:

wants and needs information input processing for  
prompting the user to input said wants and needs information.

15 29. A computer-readable recording medium for storing a  
program capable of causing a computer to perform product design  
terminal processing for acquiring, at a user's site,  
information indicating wants and needs of the user with respect  
to a product under consideration, said product design terminal  
20 processing comprising:

input processing for prompting user to input said wants  
and needs information with respect to the product by way of a  
wants and needs information input/output equipment provided at  
the product under consideration or at a product containing that  
25 product; and

sending processing for sending to a server said wants and  
needs information which was input from the user by way of said  
wants and needs information input/output equipment.

30 30. The computer-readable recording medium according to  
claim 29 wherein the aforesaid product design terminal  
processing further comprises:

storage processing for storing, in linked fashion with the  
aforesaid wants and needs information, identification

information identifying the user who input said wants and needs information; and

point value calculation processing for increasing the value of a point for providing positive feedback in response

- 5 to input of said wants and needs information in connection with a product that is put on the market for a user identified based on said identification information.

31. A computer program capable of causing a computer to  
10 perform product design processing in accordance with a desired product design concept for a product under consideration, the aforesaid product design processing comprising:

analysis processing for analyzing wants and needs information which has been input with respect to the product  
15 under consideration;

primary evaluation index selection processing for carrying out, based on said analyzed wants and needs information, weighting with respect to evaluation indices which have been previously stored in a storage device and which

- 20 are quantitative measures of the degree to which the user is likely to perceive a benefit latent in the product under consideration and inherent in the aforesaid wants and needs information to have been achieved, and selecting at least one index among a plurality of such weighted evaluation indices as  
25 a primary evaluation index; and

product concept definition processing for defining at least one product design concept for which the primary evaluation index selected by said primary evaluation index selection processing is a maximum or minimum.

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32. A computer program capable of causing a computer to perform product design terminal processing for acquiring, at a user's site, information indicating wants and needs of the user with respect to a product under consideration, said

product design terminal processing comprising:

input processing for prompting user to input said wants and needs information with respect to the product by way of a wants and needs information input/output equipment provided at

- 5 the product under consideration or at a product containing that product; and

sending processing for sending to a server said wants and needs information which was input from the user by way of said wants and needs information input/output equipment.

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